

## CBM PREP FOR MATE NODE 1 ZENITH

### OBJECTIVE:

Activate and check out Node 1 Zenith Active Common Berthing Mechanism (ACBM) and deploy capture latches.

### LOCATION:

NOD1/AFD PCS

### DURATION:

TBD

### REFERENCED PROCEDURE(S):

P/TVxx NODE 1 ZENITH CBM SURVEY (PHOTO/TV CHECKLIST)

- SSP1      1. VERIFY POWER AND DATA CONFIGURATION  
            √APCU 1,2 CONV tb (two) - Gray  
            √APCU 1,2 OUTPUT tb - Gray

CRT              SM 200 APCU Status

                    √APCU 1,2 OUT VOLTS LOW (RES) (two) > 122

PCS              Node 1: CDH  
                    Node 1: C&DH

                    √MDM N1-2 - Primary  
                    √MDM N1-1 - Secondary

2. INHIBIT ZENITH CBM PRIMARY RT FDIR

|   |
|---|
| <u>NOTE</u>   |
| CBM RT FDIR is disabled during CBM operations to prevent switching between 1553 bus channels due to a CBM RT failure. |

PCS              Node 1: CDH  
                    Node 1: C&DH

                    sel N1-1

Secondary NCS MDM Node 1

                    sel UB ORB N1 1  
                    sel RT Status

UB Orb RT Status

                    sel Inhib FDIR RT Commands

N1 1 MDM UB ORB N1 1 Inhib FDIR

**cmd** Inhib FDIR CBM N1 Zen Prim **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 20 - X

PCS 3. INHIBIT ZENITH CBM SECONDARY RT FDIR

Node 1: CDH

Node 1: C&DH

sel N1-2

Primary NCS MDM Node 1

sel UB ORB N1 2

sel RT Status

UB Orb RT Status

sel Inhib FDIR RT Commands

N1 2 MDM UB ORB N1 2 Inhib FDIR

**cmd** Inhib FDIR CBM N1 Zen Sec **Execute**

UB Orb RT Status

√RT FDIR Inhibited Number 20 - X

PCS 4. CLOSE PRIMARY RPCs

Node 1: S&M: Zenith CBM

Node 1 Zenith CBM Display

'Command Sets'

sel Prep for Mate

Node 1 Zenith CBM Prep for Mate

sel RPC 11

RPCM N13B B RPC 11

**cmd** Close **Execute**

√Position - Close

Node 1 Zenith CBM Prep for Mate

sel RPC 12

RPCM N13B B RPC 12

**cmd Close Execute**

√Position - Close

Node 1 Zenith CBM Prep for Mate

sel RPC 13

RPCM N13B B RPC 13

**cmd Close Execute**

√Position - Close

Node 1 Zenith CBM Prep for Mate

sel RPC 14

RPCM N13B B RPC 14

**cmd Close Execute**

√Position - Close

5. ACTIVATE ZENITH CBM PRIMARY MASTER CONTROLLER

Node 1 Zenith CBM Prep for Mate

sel Activate Primary Master

Node 1 Zenith CBM Act Pri Master

**cmd Activate Primary**

√Mode - Activated

√Master - Primary

√Master Cmd Status - Complete

√Comm Error - No X

sel Built-In Test Failures

Node 1 Active CBM Built In Test Failures

√No Xs

## 6. SET CONTROLLER POSITIONS ZERO

### NOTE

Command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Channel" telemetry field.

Node 1 Zenith CBM Prep for Mate

sel Initialize Controller Positions

Node 1 CBM Initialize Controller Positions

**cmd** Set All Positions to Zero Bus "X"

√Master Cmd Status - Complete

√Bolt Cmd Status (sixteen) - Complete

√Latch Cmd Status (four) - Complete

If any Bolt or Latch Cmd Status - No Broadcast

**cmd** Built-In Test

√Confirmation Request - Built-In Test

√Master Cmd Status - Complete

√Bolt Cmd Code (sixteen) - Built-In Test

√Latch Cmd Code (four) - Built-In Test

√Bolt Cmd Status (sixteen) - Complete

√Latch Cmd Status (four) - Complete

sel Built-In Test Failures

Node 1 Active CBM Built In Test Failures

√No Xs

Node 1 CBM Initialize Controller Positions

√Bolt Posn (sixteen) = 0

√Latch Posn (four) = 0

If any Bolt or Latch Posn  $\neq$  0

**cmd** Set All Positions to Zero Bus "X"

√Master Cmd Status - Complete

√Bolt Cmd Code (sixteen) - Reload

√Latch Cmd Code (four) - Reload

√Bolt Cmd Status (sixteen) - Complete

√Latch Cmd Status (four) - Complete

√Bolt Posn (sixteen) = 0

√Latch Posn (four) = 0

7. TEST BOLT DRIVE

Node 1 Zenith CBM Prep for Mate

sel Berthing Bolt Check

Node 1 CBM Berthing Bolt Check

**cmd** Bboltck

Wait 90 seconds.

√Master Cmd Status - Complete

√Bolt Cmd Code (sixteen) - BBoltck

√Bolt Cmd Status (sixteen) - Complete

√Bolt Pos (sixteen): 50 --- 51

8. DEACTIVATE ZENITH CBM PRIMARY MASTER CONTROLLER

NOTE

Steps (8 --- 16) verify secondary power/  
command path and deploy capture latches.

Node 1 Zenith CBM Prep for Mate

sel Deactivate Zenith CBM

Node 1 Zenith CBM Deactivate CBM

**cmd** Deactivate

√Mode - Deactivated

√Master - None

9. OPEN PRIMARY RPCs

Node 1 Zenith CBM Prep for Mate

sel RPC 11

RPCM N13B B RPC 11

**cmd** Open **Execute**

√Position - Open

Node 1 Zenith CBM Prep for Mate

sel RPC 12

RPCM N13B B RPC 12

**cmd** Open **Execute**

√Position - Open

Node 1 Zenith CBM Prep for Mate

sel RPC 13

RPCM N13B B RPC 13

**cmd Open Execute**

√Position - Open

Node 1 Zenith CBM Prep for Mate

sel RPC 14

RPCM N13B B RPC 14

**cmd Open Execute**

√Position - Open

10. CLOSE SECONDARY RPCs

Node 1 Zenith CBM Prep for Mate

sel RPC 03

RPCM N14B B RPC 03

**cmd Close Execute**

√Position - Close

Node 1 Zenith CBM Prep for Mate

sel RPC 04

RPCM N14B B RPC 04

**cmd Close Execute**

√Position - Close

Node 1 Zenith CBM Prep for Mate

sel RPC 05

RPCM N14B B RPC 05

**cmd Close Execute**

√Position - Close

Node 1 Zenith CBM Prep for Mate

sel RPC 06

RPCM N14B B RPC 06

**cmd** Close **Execute**

√Position - Close

11. ACTIVATE ZENITH CBM SECONDARY MASTER CONTROLLER

Node 1 Zenith CBM Prep for Mate

sel Activate Secondary Master

Node 1 Zenith CBM Act Sec Master

**cmd** Activate Secondary

√Mode - Activated

√Master - Secondary

√Master Cmd Status - Complete

√Comm Error - No X

sel Built In Test Failures

Node 1 Active CBM Built In Test Failures

√No Xs

12. SET CONTROLLER POSITIONS ZERO

NOTE

Command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Channel" telemetry field.

Node 1 Zenith CBM Prep for Mate

sel Initialize Controller Positions

Node 1 CBM Initialize Controller Positions

**cmd** Set All Positions to Zero Bus "X"

√Master Cmd Status - Complete

**cmd** Built-In Test

√Confirmation Request - Built-In Test

**cmd** Confirm Cmd  
 ✓Master Cmd Status - Complete  
 ✓Bolt Cmd Code (sixteen) - Built-In Test  
 ✓Latch Cmd Code (four) - Built-In Test  
 ✓Bolt Cmd Status (sixteen) - Complete  
 ✓Latch Cmd Status (four) - Complete  
 If any Bolt or Latch Cmd Status - No Broadcast  
**cmd** Built-In Test  
 ✓Confirmation Request - Built-In Test  
**cmd** Confirm Cmd  
 ✓Master Cmd Status - Complete  
 ✓Bolt Cmd Code (sixteen) - Built-In Test  
 ✓Latch Cmd Code (four) - Built-In Test  
 ✓Bolt Cmd Status (sixteen) - Complete  
 ✓Latch Cmd Status (four) - Complete

sel Built-In Test Failures

Node 1 Active CBM Built In Test Failures

✓No Xs

Node 1 CBM Initialize Controller Positions

✓Bolt Posn (sixteen) = 0  
 ✓Latch Posn (four) = 0  
 If any Bolt or Latch Posn ≠ 0  
**cmd** Set All Positions to Zero Bus "X"  
 ✓Master Cmd Status - Complete  
 ✓Bolt Cmd Code (sixteen) - Reload  
 ✓Latch Cmd Code (four) - Reload  
 ✓Bolt Cmd Status (sixteen) - Complete  
 ✓Latch Cmd Status (four) - Complete  
 ✓Bolt Posn (sixteen) = 0  
 ✓Latch Posn (four) = 0

### 13. DEPLOY LATCH 1 TO 210 DEGREES

Node 1 Zenith CBM Prep for Mate

sel Deploy Latch 1

Node 1 CBM Deploy Latch 1 to 210



**cmd** Deploy Latch 1 to 210  
Wait 90 seconds.  
√Confirmation Request - Deploy

**cmd** Confirm Cmd  
√Master Cmd Status - Fail  
√Cmd Code - Deploy  
√Cmd Status - Binding  
√Posn: 200 --- 210

**cmd** Stop  
√Master Cmd Status - Complete  
√Cmd Code - Stop  
√Cmd Status - Complete

14. DEPLOY LATCH 2 TO 210 DEGREES

Node 1 Zenith CBM Prep for Mate

sel Deploy Latch 2

Node 1 CBM Deploy Latch 2 to 210

**cmd** Deploy Latch 2 to 210  
Wait 90 seconds.  
√Confirmation Request - Deploy

**cmd** Confirm Cmd  
√Master Cmd Status - Fail  
√Cmd Code - Deploy  
√Cmd Status - Binding  
√Posn: 200 --- 210

**cmd** Stop  
√Master Cmd Status - Complete  
√Cmd Code - Stop  
√Cmd Status - Complete

15. DEPLOY LATCH 3 TO 210 DEGREES

Node 1 Zenith CBM Prep for Mate

sel Deploy Latch 3

Node 1 CBM Deploy Latch 3 to 210

**cmd** Deploy Latch 3 to 210  
Wait 90 seconds.  
√Confirmation Request - Deploy

**cmd** Confirm Cmd  
√Master Cmd Status - Fail  
√Cmd Code - Deploy  
√Cmd Status - Binding  
√Posn: 200 --- 210

**cmd** Stop  
√Master Cmd Status - Complete  
√Cmd Code - Stop  
√Cmd Status - Complete

16. DEPLOY LATCH 4 TO 210 DEGREES

Node 1 Zenith CBM Prep for Mate

sel Deploy Latch 4

Node 1 CBM Deploy Latch 4 to 210

**cmd** Deploy Latch 4 to 210  
Wait 90 seconds.  
√Confirmation Request - Deploy

**cmd** Confirm Cmd  
√Master Cmd Status - Fail  
√Cmd Code - Deploy  
√Cmd Status - Binding  
√Posn: 200 --- 210

**cmd** Stop  
√Master Cmd Status - Complete  
√Cmd Code - Stop  
√Cmd Status - Complete

17. SET BOLT/LATCH START POSITIONS

NOTE

Command should be issued to use currently active RS-485 bus channel (A or B). Active channel is indicated in "485 Channel" telemetry field.

Node 1 Zenith CBM Prep for Mate

sel Set Bolt/Latch Start Positions

Node 1 CBM Set Bolt/Latch Start Positions

**cmd** Set Mate Start Positions Bus "X"

- √Master Cmd Status - Complete
- √Bolt Cmd Code (sixteen) - Reload
- √Latch Cmd Code (four) - Reload
- √Bolt Cmd Status (sixteen) - Complete
- √Latch Cmd Status (four) - Complete
- √Bolt Posn (sixteen) = 0
- √Latch Posn (four) = 205

18. VERIFY PETAL COVER DEPLOYMENT

- √P/TVxx NODE 1 ZENITH CBM SURVEY complete (Photo/TV Checklist)